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EXAMINER	
RUTKOWSKI, JEFFREY M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/632,493	O'MAHONY, BARRY A.	
	Examiner	Art Unit	
	JEFFREY M. RUTKOWSKI	2473	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6,7,9-11,13,14,16 and 18-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6,7,9-11,13,14,16 and 18-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 2, 5, 8, 12, 15, 17, and 39 have been cancelled.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims **1, 3, 4, 6, 7, 9-11, 18, 19, 21-24, 27, 29, 30, 31, and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al. (US 6,631,141), hereinafter referred to as Kumar, in view of Chin et al. (US 5,959,968), hereinafter referred to as Chin, Mishra et al. (US Pg Pub 2005/0265358), hereinafter referred to as Mishra, and Palm (US Pg Pub 2004/0068686).

Regarding claim 1, Kumar teaches sending a first message including an aggregation discovery code from a first node to a second node, the second node including a remote discovery register; receiving a second message at the first node, the second message including the contents of the second node's remote discovery register (see col. 6 lines 24-29). Kumar suggests the use of a readable and writeable remote discovery register because the "System ID" and "remote port

key values" that are included in the messages are configured in memory (see col. 1 lines 40-45 and 53-55). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation discovery code.

However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs **[Palm, abstract]**.

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 3, Kumar teaches the sending of a first message from a first node to a second node comprises sending a first message from a first node to a customer node (see Fig. 1 Box 16).

Regarding claim 4, Kumar teaches receiving a first message including an aggregation discovery code at a second node from a first node, the second node including a remote discovery register; and sending a second message from the second node to the first node in response to the first message, the second message including the contents of the second node's remote discovery register, the contents of the remote discovery register (see col. 6 lines 24-29). Kumar suggests the use of a readable and writeable remote discovery register because the "System ID" and "remote port key values" that are included in the messages are configured in memory (see col. 1 lines 40-45 and 53-55). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation discovery code.

However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. The handshaking in Palm's invention occurs between a Central Office (CO) and a customer node **[0078, figure 1]**. Thus, it would have been obvious

to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs **[Palm, abstract]**.

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 6, Kumar teaches sending a first message from a first node to a second node to conditionally set a remote discovery register of the second node to an aggregation discover code provided by the first node if the remote discovery register is clear, the contents of the remote discovery register indicating whether a PHY at the second node has been allocated for aggregation (see col. 6 lines 24-40; If the remote discovery register is clear, then the port has not been assigned for aggregation. Kumar teaches that if the port is unassigned, then a System ID is assigned to the port for aggregation). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation discovery code.

However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use

the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar teaches sending a "set if clear" request message including an aggregation discovery code to conditionally set a value of the remote discovery register to the aggregation discovery code (see col. 6 lines 34-40). Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs **[Palm, abstract]**.

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 7, Kumar teaches receiving a second message at the first node, the second message including an updated contents of the second node's remote discovery register (see col. 8 lines 12-16).

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that

includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs **[Palm, abstract]**.

Regarding claim 9, Kumar teaches the second node determining whether the remote discovery register is clear, and then setting the value of the remote discovery register to the aggregation discovery code if the remote discovery register is clear (see col. 6 lines 24-40; If the port is unassigned/remote discovery register is clear, the system ID is assigned to the port for aggregation).

Regarding claim 10, Kumar teaches receiving a first message at a second node from a first node, the first message including an aggregation discovery code, the second node including a remote discovery register; and the second node, in response to the first message, determining whether the remote discovery register is clear, and then setting the value of the remote discovery register to the aggregation discovery code if the remote discovery register is clear, the contents of the remote discovery register indicating whether a PHY at the second node has been allocated for aggregation (see col. 6 lines 24-40; Kumar teaches exchanging LACP messages for assigning System IDs/discover codes to unassigned ports/clear remote discovery register.). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation discovery code.

However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in

the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs **[Palm, abstract]**.

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 11, Kumar teaches the first message includes an aggregation discovery operation field set to "set if clear," the method further comprising sending a second message from the second node to the first node, the second message including an updated contents of the remote discovery register (see col. 8 lines 14-17 and 27-36; Kumar teaches updating the

aggregation associations. If the remote discovery register is clear/aggregation port is unassigned, then a system ID is assigned to it.).

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Regarding claim 18, Kumar teaches a Media Access Control (MAC) (see col. 5 lines 11-16); a PHY coupled to the MAC (see col. 5 lines 64-67); a remote discovery register, a value of the remote discovery register to indicate whether the PHY has been allocated for aggregation (see col. 6 lines 49-54); a PHY aggregation, the PHY aggregation adapted to perform a read-conditional write upon the remote discovery register to allocate and de-allocate the PHY to PHY aggregation (see col. 6 lines 49-54). Kumar suggests the use of a readable and writeable remote discovery register because the "System ID" and "remote port key values" that are included in the messages are configured in memory (see col. 1 lines 40-45 and 53-55). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation discovery code.

However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation

stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 19, Kumar teaches the PHY aggregation comprises a PHY aggregation adapted to determine whether the remote discovery register is clear, and if so, then to set the value of the remote discovery register to an aggregation discovery code received from the first node (col. 6 lines 49-54).

Regarding claim 21, Kumar et al. teaches all the subject matter of the claimed invention with the exception of 2BASE-TL and 10PASS-TS. However, 2BASE-TL and 10PASS-TS are

known standards. Thus, it would have been obvious to one of ordinary skill in the art to use 2BASE-TL and 10PASS-TS as the PHY in the system of Kumar. The motivation for doing so is to conform to standards in the industry.

Regarding claim 22, Kumar teaches the PHY comprises a plurality of PHYs (see col. 5 lines 64-66).

Regarding claim 23, Kumar teaches the MAC comprising a plurality of MACs, and the remote discovery register comprising a plurality of remote discovery registers, each remote discovery register corresponding to a MAC (see col. 5 lines 8-16 and col. 6 lines 34-40).

Regarding claim 24, Kumar teaches a processor coupled to the MAC, a memory and an input/output controller coupled to the processor (see col. 5 lines 8-16 and col. 6 lines 34-40).

Regarding claim 25, Kumar teaches the aggregation discovery code comprises a MAC address of the node (see col. 5 lines 8-16).

Regarding claim 27, Kumar teaches the MAC address comprises an Ethernet MAC address (see col. 1 lines 15-21).

Regarding claim 29, Kumar teaches performing PHY aggregation discovery, including, in response to a message received at a second node from a first node, performing a read-conditional write operation upon a remote discovery register at the second node to perform at least one of allocate and de-allocate a PHY at the second node to PHY aggregation (see col. 6 lines 24-40). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation discovery code.

However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in

the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 30, Kumar teaches determining at the second node whether the remote discovery register is clear, and if so, then to set the value of the remote discovery register to an aggregation discovery code received form the first node (see col. 6 lines 34-40).

Regarding claim 31, Kumar teaches all of the subject matter of the claimed invention with the exception of de-allocating by matching an aggregation discovery code. However,

Nguyen teaches determining at the second node whether the value of the remote discovery register matches an aggregation discovery code provided by the first node, and if so, then clearing the remote discovery register (see col. 10 lines 25-32 and 42-45). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Nguyen in the system of Kumar. The motivation for doing so is to make the system more flexible by being able to selectively de-allocate.

Regarding claim 38, Kumar teaches receiving a message including an aggregation discovery code at a first node from a second node, the second node including a remote discovery register, said message including the contents of the second node's remote discovery register, the contents of the remote discovery register indicating whether a PHY of the second node has been allocated to aggregation (see col. 6 lines 34-40 and 49-54). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation discovery code.

However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the

system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

4. Claims **13, 14, 16 and 32-37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar in view of Chin, Palm, Mishra and Bishara (US 7,308,612).

Regarding claim 13, Kumar teaches aggregated links are assigned a System ID (see col. 6 lines 24-40; An aggregated link will be indicated by whether or not it has been assigned a System ID). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation discovery code to remove the link. However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Kumar does not disclose removing a link by selectively removing it from a table. However, Bishara teaches removing a link by selectively removing it from a table (see col. 9 lines 43-51). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Bishara in the system of Kumar in view of Chin to remove failed links.

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 14, Kumar teaches updating the contents of the remote discovery register (see col. 8 lines 12-17). Kumar teaches all the subject matter of the claimed invention with the exception of an aggregation discovery operation field. However, Chin teaches an aggregation discovery operation field set to "clear if same" (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against

the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table. Kumar in view of Chin teaches all the subject matter of the claimed invention with the exception of removing a link by selectively removing it from a table.

However, Bishara teaches removing a link by selectively removing it from a table (see col. 9 lines 43-51). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Bishara in the system of Kumar in view of Chin to remove failed links.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Regarding claim 16, Kumar teaches receiving a first message at a second node from a first node, the first message including an aggregation discovery code, the second node including a remote discovery register, the value of the remote discovery register indicating whether a PHY at the second node has been allocated for aggregation (see col. 6 lines 24-40; If the remote discovery register is clear, then the port has not been assigned for aggregation. Kumar teaches that if the port is unassigned, then a System ID is assigned to the port for aggregation). Kumar does not explicitly teach comparing a value of the remote discovery register with the aggregation

discovery code to remove the link. However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table. Kumar in view of Chin teaches all the subject matter of the claimed invention with the exception of removing a link by selectively removing it from a table.

However, Bishara teaches removing a link by selectively removing it from a table (see col. 9 lines 43-51). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Bishara in the system of Kumar in view of Chin to remove failed links.

Kumar teaches all the subject matter of the claimed invention with the exception of matching an aggregation discovery code. However, Chin teaches the aggregation adapted to determine whether the value of the remote discovery register matches an aggregation discovery code received from the first node, and if so, then to clear the remote discovery register, in response to a "clear if same" request from the first node (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table. Kumar in view of Chin teaches all the subject matter of the claimed invention with the exception of removing a link by selectively removing it from a table.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 32, Kumar teaches sending a "set if clear" request message including an aggregation discovery code to conditionally set a value of the remote discovery register to the aggregation discovery code (see col. 6 lines 34-40).

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more

efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Kumar in view of Palm teaches all the subject matter of the claimed invention with the exception of de-allocating by matching an aggregation discovery code. However, Chin teaches comparing a value of the remote discovery register to the aggregation discovery code (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table.

Kumar in view of Chin teaches all the subject matter of the claimed invention with the exception of removing a link by selectively removing it from a table. However, Bishara teaches removing a link by selectively removing it from a table (see col. 9 lines 43-51). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Bishara in the system of Kumar in view of Chin to remove failed links.

Kumar discloses a network architecture where each device in a network is assigned an identifier (see col. 1 lines 40-45). Kumar does not disclose a remotely readable and writeable register capability. Mishra discloses *a remotely readable and writeable register* (see paragraphs 0087-0088). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Mishra's architecture in Kumar's invention to allow identifiers to be automatically assigned (Mishra, paragraphs 0020-0021).

Regarding claim 33, Kumar further teaches sending a first message from a first node to a second node, the first message having a discovery operation field set to "set if clear", the set if clear message including an aggregation discovery code, the second node including a remote discovery register; determining if the remote discovery register is clear; setting a value of the remote discovery register to the aggregation discovery code if the remote discovery register is clear (see col. 6 lines 34-40).

Regarding claims 34 and 35, Kumar teaches that the LACP messages are used to determine the availability and capabilities of each link (see col. 6 lines 24-29). Kumar suggests the use of a readable and writeable remote discovery register because the "System ID" and "remote port key values" that are included in the messages are configured in memory (see col. 1 lines 40-45 and 53-55). Kumar teaches all the subject matter of the claimed invention with the exception of using G.994.1 messages.

Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. The handshaking in Palm's invention occurs between a Central Office (CO) and a customer node **[0078, figure 1]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs [Palm, abstract].

Regarding claim 36, Kumar teaches all the subject matter of the claimed invention with the exception of de-allocating by matching a discovery code. However, Chin teaches an

aggregation discovery operation field set to "clear if same" (see col. 15 lines 43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table. Kumar in view of Chin teaches all the subject matter of the claimed invention with the exception of removing a link by selectively removing it from a table

Regarding claim 37, Kumar does not teach the G.994.1 handshaking. However, Palm teaches using handshaking in accordance with G.994.1 to determine the capabilities of each link **[0051]** that includes CLR and CL messages **[0133]**. Thus, it would have been obvious to one of ordinary skill to determine the capabilities and availability of each link during handshaking by using the system of Palm in the system of Kumar. The motivation for doing so is to make the system more efficient by minimizing the number retransmission messages, when an error occurs **[Palm, abstract]**.

5. **Claims 20, 26 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar in view of Chin, Mishra and Palm as applied to claim 18 above, and further in view of Bishara.

Regarding claim 20, Kumar teaches all the subject matter of the claimed invention with the exception of matching an aggregation discovery code. However, Chin teaches the aggregation adapted to determine whether the value of the remote discovery register matches an aggregation discovery code received from the first node, and if so, then to clear the remote discovery register, in response to a "clear if same" request from the first node (see col. 15 lines

43-63; The device ID and port ID are transmitted in the aggregation message. These IDs are then compared against the state of the port aggregation stored in the table.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Chin in the system of Kumar. The motivation for doing so is to make the system more efficient by storing aggregation groups in a table. Kumar in view of Chin teaches all the subject matter of the claimed invention with the exception of removing a link by selectively removing it from a table.

However, Bishara teaches removing a link by selectively removing it from a table (see col. 9 lines 43-51). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Bishara in the system of Kumar in view of Chin to remove failed links.

Regarding claim 26, Kumar further teaches the aggregation discovery code comprises a MAC address of the node (see col. 5 lines 8-16).

Regarding claim 28, Kumar further teaches the MAC address comprises an Ethernet MAC address (see col. 1 lines 15-21).

Response to Arguments

Applicant's arguments with respect to **claims 1, 3-4, 6-7, 9-11, 13-14, 16, 18-38** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY M. RUTKOWSKI whose telephone number is (571)270-1215. The examiner can normally be reached on Monday - Friday 7:30-5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrey M Rutkowski/

Examiner, Art Unit 2473

/KWANG B. YAO/

Supervisory Patent Examiner, Art Unit 2473